

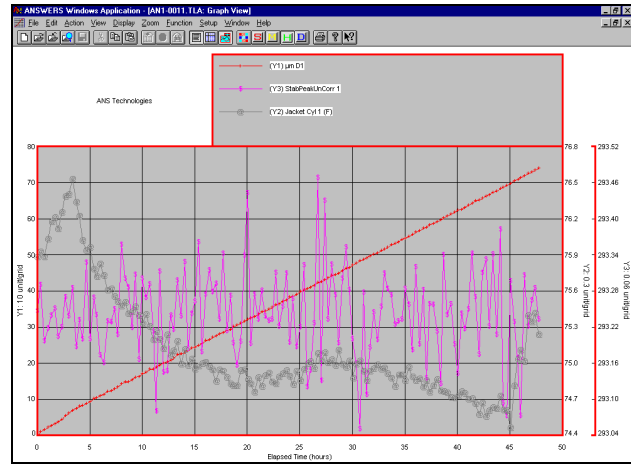
ANSWERS Integrated SLA Software Package

ANSWERS Data Acquisition & Analysis Software Package

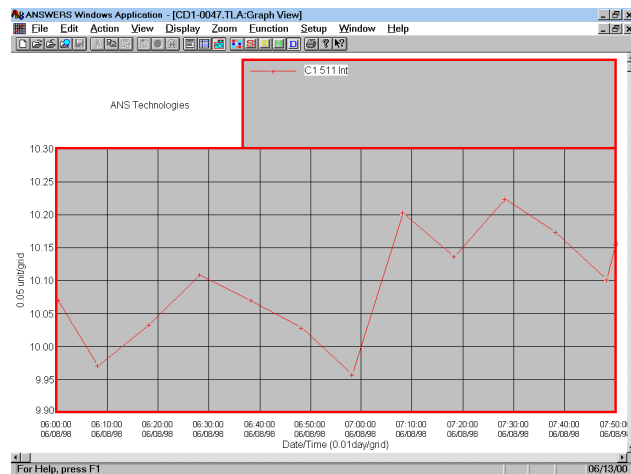
- Performs a multitude of control and analysis functions for SLA experiments.
- ANSWERS controls up to 4 detectors, and controls the transfer of the spectral data from each MCA at the end of each counting interval.
- For each data point, ANSWERS independently stores and analyses the spectrum from each detector in real time and displays the results in terms of wear or corrosion. The analysis is specific to the detector in question.

| DATE/TIME | ELAPSED T | SPC# | RESETS | µm D1 | cps D1 | µm D2 | cps D2 | StabPeakCorr |
|-----------|------------|------------|--------|------------|-----------|-----------|-----------|--------------|
| | | | | WearResMet | CountsSec | WearFtMet | CountsSec | StabPeakCorr |
| 10:15:06 | 2002/03/26 | 0000000000 | bct | 0.0000 | 0.00 | 0.0000 | 110.57 | 0.00 |
| 10:17:59 | 2002/03/26 | 0000000000 | nra | 0.0000 | 17276.04 | 1.3389 | 7.56 | 193.66 |
| 10:19:21 | 2002/03/26 | 0000000000 | | 15.2320 | 17012.89 | 4.8660 | 20.00 | 193.64 |
| 10:20:22 | 2002/03/26 | 0000010010 | 2 | 29.2376 | 16770.33 | 7.4005 | 30.45 | 193.65 |
| 10:21:23 | 2002/03/26 | 0000020020 | 3 | 36.4837 | 16645.74 | 10.5673 | 43.43 | 193.65 |
| 10:22:24 | 2002/03/26 | 0000030030 | 4 | 55.7792 | 16312.39 | 16.3375 | 67.15 | 193.66 |
| 10:23:25 | 2002/03/26 | 0000040040 | 5 | 70.7396 | 16053.34 | 26.8237 | 110.25 | 193.66 |
| 10:25:11 | 2002/03/26 | 0000050050 | 6 | 92.1192 | 15694.60 | 26.8237 | 0.00 | 193.66 |
| 10:26:12 | 2002/03/26 | 0000060060 | 7 | 112.7208 | 15328.67 | 29.2608 | 10.02 | 193.67 |
| 10:27:13 | 2002/03/26 | 0000070070 | 8 | 137.3032 | 14903.98 | 32.3265 | 25.06 | 193.65 |
| 10:28:14 | 2002/03/26 | 0000080080 | 9 | 157.1004 | 14561.96 | 37.9566 | 45.00 | 193.66 |
| 10:29:16 | 2002/03/26 | 0000090090 | 10 | 170.9288 | 14323.06 | 46.8675 | 82.38 | 193.65 |
| 10:30:17 | 2002/03/26 | 0000100100 | 11 | 200.2833 | 13815.93 | 67.7629 | 168.27 | 193.66 |
| 10:31:18 | 2002/03/26 | 0000110110 | 12 | 214.6184 | 13569.26 | 77.6094 | 209.74 | 193.66 |
| 10:32:43 | 2002/03/26 | 0000130220 | 13 | 210.6184 | 13361.52 | 107.4655 | 331.45 | 193.13 |
| 10:33:44 | 2002/03/26 | 0000140230 | 14 | 235.2589 | 13141.77 | 150.8296 | 509.69 | 193.13 |
| 10:34:45 | 2002/03/26 | 0000150240 | 15 | 254.6650 | 12933.03 | 190.3015 | 704.01 | 193.12 |
| 10:35:46 | 2002/03/26 | 0000160250 | 16 | 277.2932 | 12694.25 | 252.1479 | 926.13 | 193.13 |
| 10:36:47 | 2002/03/26 | 0000170260 | 17 | 298.2405 | 12471.24 | 287.0089 | 1069.41 | 193.13 |
| 10:37:49 | 2002/03/26 | 0000180280 | 18 | 315.3624 | 12288.35 | 330.3448 | 1247.53 | 193.12 |
| 10:38:50 | 2002/03/26 | 0000190290 | 19 | 332.1008 | 12110.15 | 387.5382 | 1482.61 | 193.12 |
| 10:40:16 | 2002/03/26 | 0000200550 | 20 | 332.1008 | 16083.05 | 387.5382 | 0.00 | 190.67 |
| 10:41:18 | 2002/03/26 | 0000210570 | 21 | 349.4120 | 15866.20 | 391.3012 | 15.47 | 190.67 |
| 10:42:19 | 2002/03/26 | 0000220590 | 22 | 353.1250 | 15576.79 | 391.4797 | 16.20 | 190.67 |
| 10:43:20 | 2002/03/26 | 0000230590 | 23 | 351.9567 | 15604.92 | 391.6825 | 17.03 | 190.66 |
| 10:44:21 | 2002/03/26 | 0000250000 | 24 | 351.8719 | 15606.36 | 392.4449 | 20.17 | 190.67 |
| 10:45:22 | 2002/03/26 | 0000260010 | 25 | 349.9468 | 15655.68 | 392.1286 | 19.87 | 190.67 |
| 10:46:23 | 2002/03/26 | 0000270020 | 26 | 355.6903 | 15515.01 | 393.0288 | 22.57 | 190.66 |
| 10:47:24 | 2002/03/26 | 0000280030 | 27 | 395.6027 | 14553.92 | 399.1114 | 47.57 | 190.67 |
| 10:48:25 | 2002/03/26 | 0000290040 | 28 | 419.8071 | 13971.08 | 411.7266 | 99.42 | 190.66 |
| 10:49:27 | 2002/03/26 | 0000300060 | 29 | 453.6038 | 13157.25 | 426.2557 | 159.14 | 190.67 |

- An analysis (a series), according to a specific set of parameters, is a single number or data point for each counting interval.
- Up to 100 series may be analysed at the end of each interval. Thus the data set comprises a matrix of rows and columns, where each column is a series, and each row is a counting interval.
- The series data is continually updated which allows the user to monitor on-line the evolution of wear or corrosion from a number of components simultaneously.



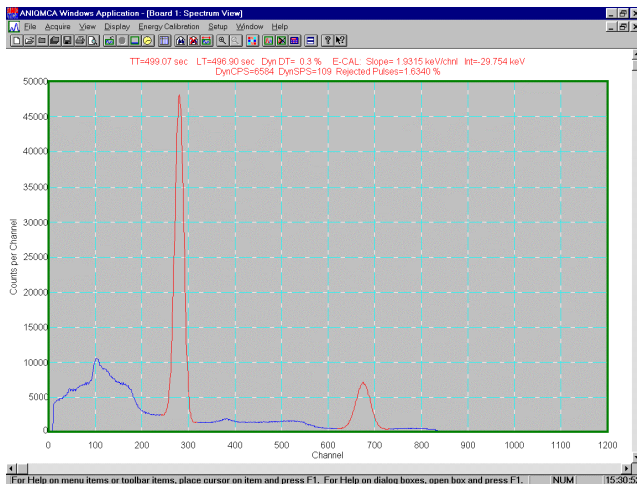
- ANSWERS is also equipped to control, analyse & create series from our ANIQIO board. This data would normally include operating parameters of the machine itself, such as temperatures, pressures or speeds.
- In addition to the analysed data set, the individual raw spectra are stored. This permits the user to perform an automatic re-analysis of the gamma data after the fact to define new or modified series.
- ANSWERS also includes an automatic gain stabilization system, a series combination system, an on-line wear rate generator, as well as numerous graphical display controls & features.



ANIQMCA Acquisition & Analysis Software

ANIQMCA Acquisition & Analysis Software

- ANIQMCA is designed to acquire spectral data in single periods, and display the spectrum in graphical mode.
- It controls and downloads data from the ANIQMCA14 Modules.
- ANIQMCA allows the user to open a number of documents, limited only by the memory of the PC. Each document is a histogram with an array size of either 1024, 2048 or 4096 channels. Each channel contains an integer from 0 to 2^{32} .
- The user may create on-line documents, one for each board. Such documents may be used to acquire live data.
- The data may be saved on disk in an MCA file, which may be read as an off-line document and analysed.



- The data may be viewed graphically in the Spectrum View. There is a header that displays calibration information.

- Automatic and manual scaling features are available.
- The user may set up to ten Regions-of-Interest (ROIs) on the spectrum, used both to calibrate the energy, and to perform analysis of a photopeak contained therein.
- The Data View displays a table of the raw data, with columns for Channel Number, Energy and Counts, as well as ROI data.
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| Chnl | Energy | Counts | ROI# | From: Chn1No= | To: Chn1No= | Peak: Chn1No= | Int: Counts= | Area: Counts= | Energy= | CPS= |
|------|--------|--------|--------|---------------|-------------|---------------|--------------|---------------|---------|------|
| 0 | 0.0 | 0 | | | | | | | | |
| 1 | 1.0 | 0 | | | | | | | | |
| 2 | 2.0 | 0 | | | | | | | | |
| 3 | 3.0 | 0 | | | | | | | | |
| 4 | 4.0 | 0 | | | | | | | | |
| 5 | 5.0 | 0 | | | | | | | | |
| 6 | 6.0 | 0 | | | | | | | | |
| 7 | 7.0 | 0 | | | | | | | | |
| 8 | 8.0 | 0 | | | | | | | | |
| 9 | 9.0 | 0 | | | | | | | | |
| 10 | 10.0 | 0 | | | | | | | | |
| 11 | 11.0 | 0 | | | | | | | | |
| 12 | 12.0 | 0 | | | | | | | | |
| 13 | 13.0 | 1 | | | | | | | | |
| 14 | 14.0 | 1 | | | | | | | | |
| 15 | 15.0 | 0 | | | | | | | | |
| 16 | 16.0 | 0 | | | | | | | | |
| 17 | 17.0 | 4 | | | | | | | | |
| 18 | 18.0 | 27 | | | | | | | | |
| 19 | 19.0 | 76 | | | | | | | | |
| 20 | 20.0 | 56 | | | | | | | | |
| 21 | 21.0 | 73 | | | | | | | | |
| 22 | 22.0 | 79 | | | | | | | | |
| 23 | 23.0 | 65 | | | | | | | | |
| 24 | 24.0 | 66 | | | | | | | | |
| 25 | 25.0 | 56 | | | | | | | | |
| 26 | 26.0 | 71 | | | | | | | | |
| | | | ROI# 1 | | | | | | | |
| | | | | From: Chn1No= | 26.0 | Energy= | 26.0 | | | |
| | | | | To: Chn1No= | 81.0 | Energy= | 81.0 | | | |
| | | | | Peak: Chn1No= | 52.6 | Energy= | 52.6 | | | |
| | | | | Int: Counts= | 13547.0 | CPS= | 451.6 | | | |
| | | | | Area: Counts= | 9235.0 | CPS= | 307.8 | | | |
| | | | ROI# 2 | | | | | | | |
| | | | | From: Chn1No= | 791.0 | Energy= | 791.0 | | | |
| | | | | To: Chn1No= | 955.0 | Energy= | 955.0 | | | |
| | | | | Peak: Chn1No= | 878.8 | Energy= | 878.8 | | | |
| | | | | Int: Counts= | 54992.0 | CPS= | 1833.1 | | | |
| | | | | Area: Counts= | 51829.5 | CPS= | 1727.7 | | | |

- ANIQMCA is also used to define, save and transmit certain parameters and to the ANIQMCA14 Spectroscopy Module. The parameters are sent to the board's memory, and control how the input voltage pulses are analysed.

ANSWERS and ANIQMCA are both developments of ANIQ R&D Inc., the R&D partner of ANS Technologies Inc.

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